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DATE: March 13, 1969

AGE CEI DESIGN/PERFORMANCE VERIFICATION TEST PLAN

FOR

CEI No. MOL 104A

TRANSPORTER - MISSION MODULE

FOR THE

MANNED ORBITING LABORATORY (MOL) SYSTEM

CDRL ITEM NO. T014/UT-454

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GENERAL ELECTRIC COMPANY

SPACE SYSTEMS OPERATION

MISSILE AND SPACE DIVISION

AUG 25 1969

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## SECTION 1.0

## PURPOSE

This ~~Design/Performance Verification Test Plan~~ report presents a summary of the overall test program for the Transporter - Mission Module. The test plan is based upon the requirements of CEI Specification CP2004A Part I, dated 19 September 1968.

## SECTION 2.0

## REFERENCES

| | |
|---|---|
| CP2004A<br>19 September 1968 | CEI Detailed Specification (Transporter - Mission Module) Part I: Performance/ Design and Product Configuration Requirements CEI No. MOL 104A. |
| 47J401215 | Integrated Transporter (Mission Module) |
| 47C404361 | Prime Mover |

## SECTION 3.0

## TEST SPECIMEN

The Transporter - Mission Module is used to provide transportability and environmental protection for the Integrated Mission Module or the Mission Module Forward Section when each is in the transport configuration. The Transporter - Mission Module consists of the following:

A. A towed trailer used to support and transport either of the two above Vehicle configurations.

B. An Environmental Shroud to completely enclose the Vehicle.

C. An Environmental Control Unit (ECU) which is a self-contained system that conditions and circulates air to the shroud - enclosed Vehicle in a closed-loop circulating system in order to control the atmospheric conditions surrounding the Vehicle.

D. An Environmental Monitor Unit (EMU) to sense, alarm and indicate or record the critical environmental parameters during all transport modes of the MOL Mission Module.

E. Transportation Support Fixtures which are used to support and cushion the Vehicle loaded shroud when mounted on the trailer.

## SECTION 4.0

## TEST IMPLEMENTATION

### 4.1 LOCATION AND SEQUENCE

The roadability portion of the Verification Testing will be conducted on local streets and highways. The Vibration portion of the testing will be conducted on a large paved area such as a parking lot. All of this testing will be performed at or near the General Electric Company's facility located at Valley Forge, Pennsylvania.

The air transportability portion of the testing will be conducted at an airfield to be designated at a later date.

All tests shall be performed in the sequence listed in Section 5 of this document, unless hardware availability or schedule changes necessitate a change in the testing sequence.

### 4.2 TEST SPECIMEN CONFIGURATION

The configuration of the Transporter - Mission Module will be as shown in in General Electric drawing 47J401215, and using the Mock-up Vehicle as the load. The Transporter - Mission Module will be towed using a prime mover General Electric drawing 47C404361.

### 4.3 TEST PREREQUISITES

Prior to performing the tests herein the following shall have been completed:

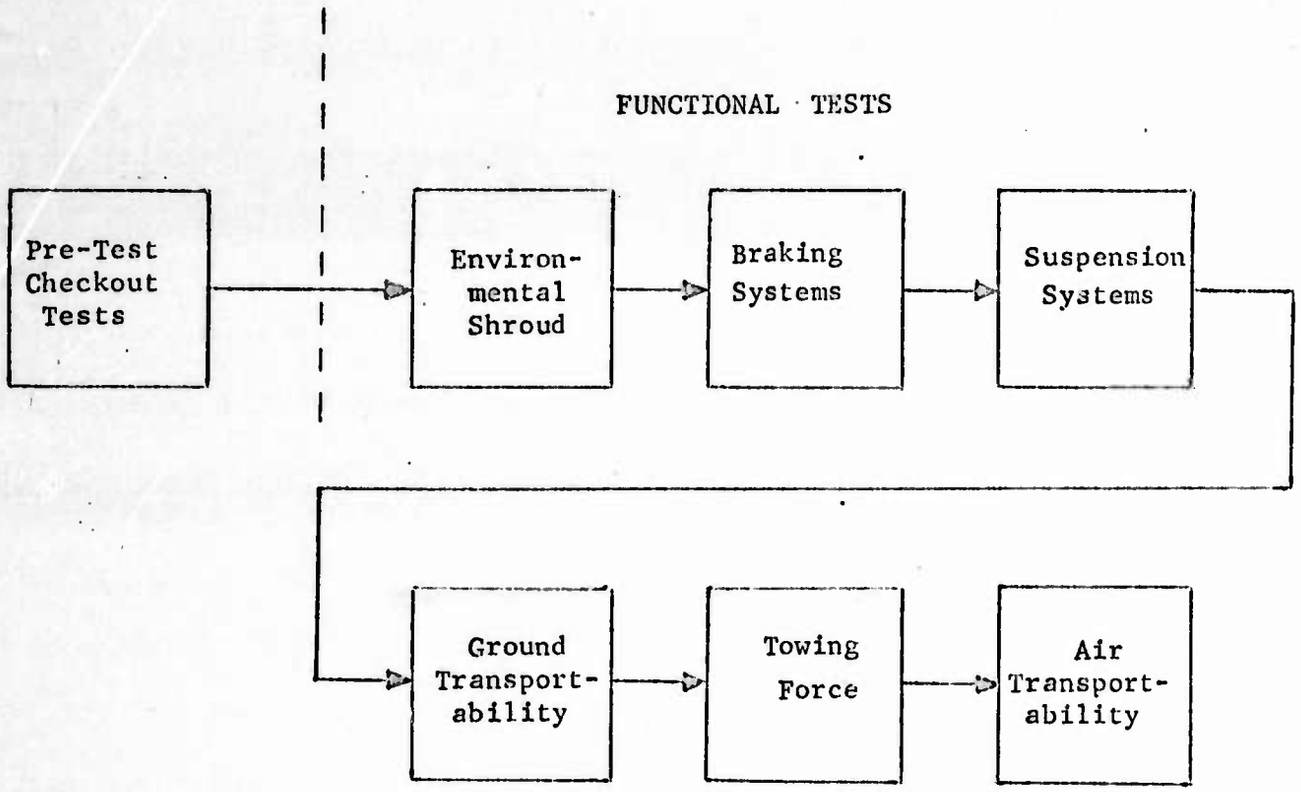
A. The Transporter - Mission Module shall have undergone Product Assurance Inspection and have successfully completed Acceptance Tests.

B. The Transporter - Mission Module's sub-assemblies shall have undergone Product Assurance Inspection, and have successfuly completed both Acceptance and Validation Tests.

## SECTION 5.0

## VERIFICATION TEST PLAN

The design of the Transporter - Mission Module will be verified by performing the following tests:



## 5.1 PRE-TEST CHECKOUT

The ECU and EMU will each be subjected to a functional performance test. The Transporter and Prime Mover will be checked for operational readiness, including the proper operation of brakes and the lifting system. The loaded transporter will be weighed and each individual wheel loading checked.

## 5.2 FUNCTIONAL TESTS

### 5.2.1 ENVIRONMENTAL SHROUD

Pressure checks, leak tests, and air flow rate tests on Environmental Shroud shall be performed.

### 5.2.2 BRAKING SYSTEM

The Braking System Tests will consist of normal and emergency stops on a dry, smooth, level pavement free of loose material. The ECU and the EMU shall be energized for this test.

### 5.2.3 SUSPENSION SYSTEM

The Suspension System will be tested with the Transportation Support Fixture air springs inflated and the ECU and EMC energized. The Transporter shall be driven over an obstacle course to test the Suspension System.

### 5.2.4 GROUND TRANSPORTABILITY

The Transporter - Mission Module will be driven over a to-be-determined route a minimum of 100 miles at normal speeds with one leg of this trip to be performed at night. The Transporter is to be towed over a crest of five degrees (longitudinal) at a speed not in excess of 5 MPH. The ECU and EMU will be energized during the test.

5.2.5 TOWING FORCE

This Test will be conducted with the Transporter to prove the Transporter meets the design requirements of towing force.

5.2.6 AIR TRANSPORTABILITY

Verification of Air Transportability shall be tested by one cycle of air transportation that will include on-loading and off-loading of the Transporter - Mission Module. The ECU, EMU shall be operational, using the frequency coverter, during the one cycle of Air Transportation.